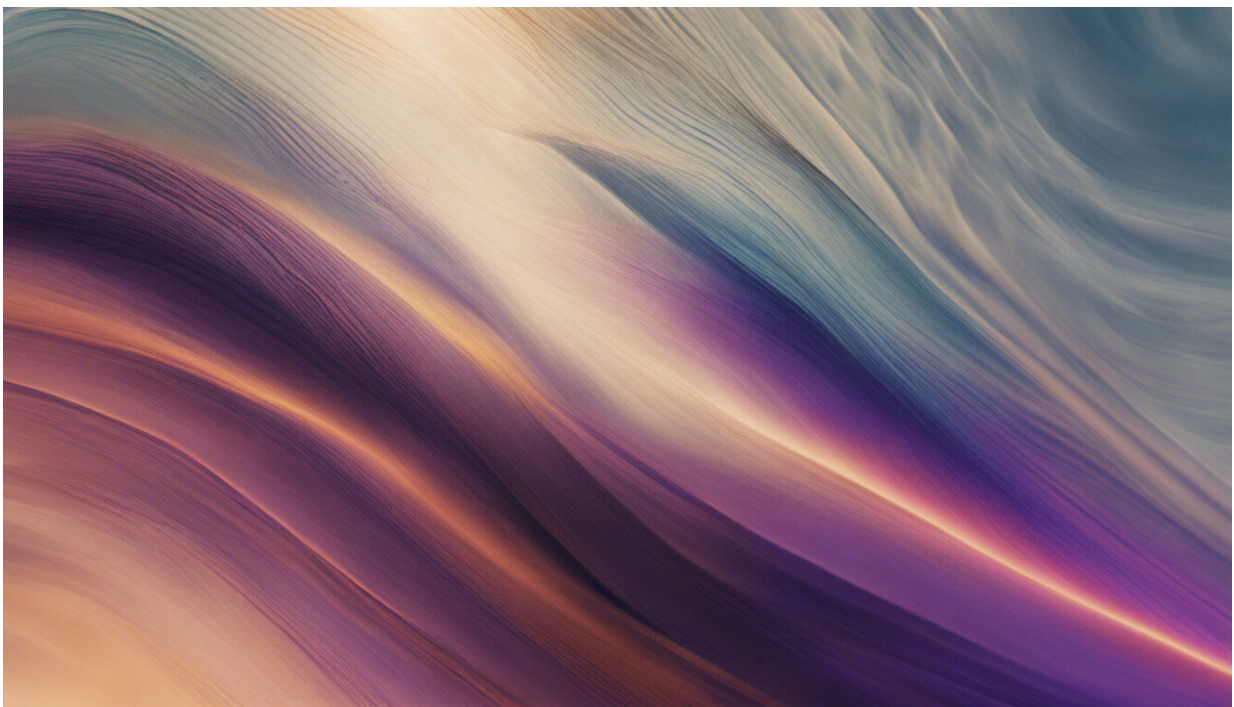


Tackling unethical authorship deals on scientific publications

February 2 2015, by Isaac Santos, Carlos Duarte, Damien Maher; Peter Macreadie And Scott G Johnston



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The research excellence of academics is often measured by the quantity and quality of their scholarly publications. But how do we know that all authors listed on a publication have actually been involved in the research?

Is our "publish or perish" culture encouraging the development of unethical, fraudulent co-authorship deals?

The number of authors on scientific papers has been growing. In 2011, the average number of authors on a paper stood at [4.5](#), up from 3.8 in 2007. Papers listing hundreds – even thousands – of authors are not uncommon.

Authorship has become a core currency of modern science, and the main means to assign credit to researchers. Assigning authorship responsibly and ethically is essential to the health of any [research](#) group and the broader scientific community.

Sharing credit for scientific discoveries is a challenge. The growing number of authors listed on papers demands that individual professional ethics be stronger than ever.

If willing to do so, experienced group leaders can easily take advantage of inexperienced scientists, and authorship credit will always [flow up the rank ladder](#). The "[Matthew Effect](#)" in science describes how senior scientists can easily benefit through credit that belongs to junior co-authors.

This places junior scientists in difficult positions to argue against any unfair authorship deals. Group leaders may just quietly accept, or even enforce, unfair authorship deals to further build their credentials, and retain leadership status.

While data are scarce and hard to come by, the pressure to publish may create incentives for growing numbers of unethical authorship deals.

These deals come in many names including [coercive, honorary, guest, gift, ghost, and duplicated authorship](#). Minimising unethical authorship

deals is challenging when academics may be unacquainted with formal authorship criteria.

Take the test

Many academics may have experienced or heard about unethical authorship deals. If you have at least a few scientific papers under your belt, are you aware of any of the following situations?

1. A senior academic is included in publications just because they are the gatekeeper to facilities funded with taxpayer money.
2. A senior academic adds additional authors to a paper even if the first author (often a junior academic) never spoke to these additional authors or has no idea about their contributions.
3. A junior academic adds a senior academic to a paper simply to improve career prospects, or potentially bring prestige to facilitate the publication of the paper.
4. A senior academic expects to be given authorship on all papers produced by their group regardless of whether they contributed to the research or not.
5. Large research groups including all members in all papers even when there has been negligible contribution from some of them.

If you are a junior academic who answered "no" to all the above questions, you have good reasons to be proud of your group's ethics.

If you answered "yes" to any, it may be time to consider your career and leadership options. You may be part of an undeclared, unethical scheme in which junior academics do the work while the most senior academics take undue credit and reap the rewards.

All the options listed above breach our ethics and [codes of conduct](#), and artificially inflate the record of senior academics.

Unethical conduct around authorship is akin to a lie and undermines the entire discipline of science.

Occasionally such behaviour is exposed. For example, a senior academic [lending his name to a paper](#) had to argue that he did not participate in the research so he could escape a more serious case of academic misconduct. Such cases have led some major journals to issue statements requesting details on the contributions of all co-authors.

Incentives in the university system

Our highly competitive "publish or perish" culture is well established and encouraged by reward processes in universities and funding agencies.

A scientist's publication record is considered a major criteria influencing success in prestigious Australian Research Council (ARC) grants or promotion. In an environment of increasing competition, universities need to develop strategies to maximise funding outcomes.

A common Australian university strategy is to invest most of the resources into a few science stars that are expected to raise additional funding from the ARC.

This approach has at least one major flaw. The relationship between an academic's productivity versus dollars invested is unlikely to grow linearly.

At a given point, the research outputs will reach the point of diminishing returns and continuing institutional investment is unlikely to further increase productivity. Personal productivity can only be squeezed so far. Researchers have a finite capacity to meaningfully contribute as authors.

At this point, unethical authorship schemes may come into play and

quickly gather momentum.

Academics who control substantial university resources may suddenly become untrained managers of large research groups. They become science politicians. These new managers may still be listed as authors even though effective management requires re-allocation of time away from scientific endeavours.

The incentive for senior academics to become managers should be better pay, not contractual key performance indicators (KPI) that value their inclusion as an author on every paper produced by a work unit for which they are responsible.

The way forward

Challenging spurious authorship claims of senior academics is perceived as a career suicide for junior academics in an environment of short-term contracts controlled by the group leader.

The senior academic knows that if the junior collaborator objects, [the choice of whistleblowing is daunting](#). The junior academic may think it is far easier and safer to just add another name to a multi-authored paper if this culture is already established.

In this case, the junior academic offers payment (by authorship) to the senior academic in return for protection in an uncertain academic environment.

Such authorship schemes erode both scientific and personal integrity. They essentially amount to publication prostitution. So how do we prevent them?

Senior academics should carry most of the burden and lead from the

front by example. High standards of individual ethics are critical, as is creating and fostering a culture in which personal ethics are more valued than research outputs.

Educating junior academics not only on the importance of publishing, but also on how to properly attribute authorship is a good starting point.

The requirement of a significant intellectual input requiring contributions to designing and/or conducting the study as well as analysis and writing, must not be waived for anyone.

Follow the codes

There are [national](#) and [international](#) guidelines and codes of conduct that establish clear criteria for shared authorship. For simplicity, some of us follow an [authorship index](#) that works quite well in our broad field of natural sciences.

In a research environment with strong ethics, the leading author should offer authorship to all who may have a legitimate authorship claim. They should also be open to considering co-authors whose role may not have been evident, which can occur in large interdisciplinary efforts.

The invited academics should then use even stronger personal ethics to decide whether they should accept authorship or opt for a warm acknowledgement. In this way, excluding a colleague who has made a sufficient contribution is avoided. Unfair exclusions can also poison academic environments.

But in a research environment where professional ethics are weak, undeserving authors are unlikely to decline invitations to become authors. Here, the opposite approach should be adopted by the leading author. Co-authors are invited only when the leading author has

confidence the colleague made a large enough contribution to warrant authorship.

When weak ethics or self-interest prevents action from senior academics, junior academics should find creative ways to stand up and retain credit for their discoveries without committing career suicide.

Confidential conversations with independent mentors – that may include an ethics officer or a director of research – can start a process of top down change without threatening the career of the junior academic.

The future

If junior academics don't take action when facing unethical authorship deals, the worst may happen.

If junior academics accept the masked exploitation as they develop a publication portfolio, they replicate the unethical behaviour of their senior peers and jointly break codes of conduct.

If this unethical behaviour is passed from one generation to the next, the scale of the problem will only increase. With different generations of scientists vying for the same pool of funding, a publication arms-race is likely to develop, to the detriment of personal and academic integrity.

Ending a culture of unethical [authorship](#) deals can be quite challenging. Preventing these deals in the first place is a responsibility of the entire scientific community.

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